SECRET (When Filled In)

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		DATE	April 1964				
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at ______, at Government expense. It is being held in storage. It will be GFE as a test vehicle on a forthcoming Processor Research Program in a GFE clean-room enclosure.

Services of the Engineering Representative and the Manufacturing Representative at March AFB have been completed and were satisfactory.

By Staff Study of 13 November 1963, it was recommended that the HTA/5 processor contract be amended to include the "Accumulator" and "Film Spools" as new work in the amount of \$23,848.00. These two items have been delivered, were satisfactory and have been accepted.

By Staff Study of 14 January 1964, it was recommended that the HTA/5 be accepted and that a conference be arranged by Station 954 to negotiate acceptance and final contract settlement. This action is awaiting results of a final audit of accounts at

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FORM 10-63 1897 SECRET (When Filled In)

Excluded from automatic downgrading and declassification

(12.36)

Prototype HTA/5 processor was delivered to March AFB, California, on 30 September for acceptance tests and extensive additional tests imposed by SAC. Tests are being conducted by 15th Rec. Tech. Squad. under Lt Col William Richards. STATOTHR

One Representative and one Manufacturing Representative were in attendance for the first 20 days for installation and checkout. The Engineer Representative has been retained and is expected to remain there for an additional period not to exceed a total of 45 days which will end on or about 22 November. All contractor service (by these two men) has been at Government expense.

The contractor has been quite cooperative and has put forth a good effort to keep the machine operating during the test period. However, the processor has exhibited excessive breakdowns due to a variety of causes. Consistent effort has been applied to correct each breakdown as it occurs. Most problems have been alleviated. One, however, has recurred many times and thus far has defied solution. This has been the frequent but inconsistent cut-out of various solution pumps which seem to be overloaded, causing them to overheat and blow the motor fuses. It has been assumed that the pump overheating is due to low voltage supply and heavier fuses have been used to keep the pump motors running at somewhat higher temperatures than recommended by the pump manufacturer. but supposedly within specifications. This attempt to keep the system in reliable operation has also failed. Because of these frequent breakdowns or partial stoppage of the system, it has been virtually impossible to conduct a systematic and meaningful test program. At no time has the machine run more than 9 hours consecutively without at least one partial breakdown.

STATOTHR The project monitor will not accept the machine for final payment until provides acceptable reliability in the operating components.

During the week of 17 November, the monitor will endeaver to define the cause and initiate positive corrective action. This may, however, involve additional contract funds.

The last previous inspection was on 3 and 4 November at which time the machine failed to exhibit sufficient reliability to justify acceptance.

Previous contract actions have been initiated to provide services of the two contractor personnel at \$6,500.00; extension of services at \$2,500.00; payment for extra materials required for installation at March AFB in the amount of \$656.00; and payment for new work on accumulator and film speels at \$23,848.00.

...dnesday, October ?, 1963.

Continued this mookup work on hoses between service unit and machine. had trouble with quick disconnects. We were unable to tighten the hose clamps onough to keep them from leaking. We used rubber sheeting between the hose and the quick disconnect to take care of this. We installed 2,000 feet of this leader on the film cart. This will be used to check out the air knives operation and to make sure that the vacuum capstans are properly aligned. We installed the staple splicer. A number of identification tags have come off in the process of moving. We had to individually ring out the string because of this.

Thursday, October 3, 1963.

Front section of michine was realigned using plumb and levels. Wire gutters were installed and all wiring was connected along back side of machine. Finished hooking up wiring between service units. Gave a class in the operation of the control pinel to the personnel who had been assigned by the USAF. Connected the lines from the compressor to the splicer.

Friday, October 4, 1963.

howes we took 110 V. wire and tried out all 110 V. systems in rachine by hooking the viring directly up to the individual units. This took approximately four house or Woh's time.

The prief being of such a nature that anybody reading it, would be able to understand the beachine. I did not finish this and will continue it Monday.

We had to rewire the relay which made contact to the drybox 2 HP blower. This unit had been hooked up after the machine was taken apart and was never checked out.

We set the end of film switch so that it will oferate. This was something which we knew had to be done here. An airman was sent to houston Fearless to fick up hose and electrical cables. Neither sob nor myself could since we were then up most of the day. They brought the hose down here at about 6 o'clock which was too late to install it.

Saturday, October 5, 1903.

Lo were an today to do the nother of the electrical cables. This took until

Menday, October 7, 1963.

I came in at 11 o'clock today and worked until 4 o'clock with one of the sergeants hooking up all the drain hoses. We had some trouble since we do not have any elbows to go into the drains. At 4 o'clock the rest of the crew came in and we worked until a little after 12 o'clock tonight. Filled all tanks with water and fixed almost all bearings because the back plates were leaking. We fixed a few leaks in the service units. The water hose which the Air Force supplied us with on the machine busted two times which caused quite a mess and a lott of work. It cannot withstand hot water then it melts. A lot of the wiring got wet and had to be dried.

Monday, October 14, 1963.

We had a very bad leak in the fix recirculation pump. It was leaking at the pump to valve connection. It seemed that the protoseal broke loose. To fix this we had to take a lot of the piping out and replumb. This took approximately two hours.

We had a number of representatives here tonight from different Airforce Bases. They were sent here to observe the mad ine. Also Colonel George spent all ovening with us. After the leak was fixed we transferred the fix. solution from the fix noid tank to the processor. This took exactly 3 min. and 45 seconds. Exerpted was impressed by this time. We then ran a scratch test again since the previous scratch test had come out bad. We ran it off the filmoart making sure previous scratch test had come out bad. We ran it off the filmoart making sure previous scratch test had come out bad. We ran about 200 ft. of 1165 that there was no tension from cart to capstan. We ran about 200 ft. of 1165 that there was no tension from cart to capstan. The ONLy trouble we ran into was that she would have a tendency to move on the metering drive capstan. She did not slip. It was the tracking which seemed to give us problems. Since the machine was lined up perfectly, this worried us a little. We did not try to locate this trouble tonight there we had a number of other tests to run. She would transport good for about 50 ft. and then would go off-track. All we did to take care of this tonight was to grab the film at the capstan and line it up properly.

We do not have any problems with leader or any of the other Tilms.

The scratch test was worked at by us Tuesday morning. It looked good. No scratches. No watermarks. The only objectionable part was very slight vacuum capstan marks. They are hard to pick out but are there. They suggested that on this thin base which has emulsion on both sides we cut out the vacuum on this capstan. This should work since the film has a tendency of wanting to stick to the capstan.

We also ren 5 strips of H & D's. We varied the speed from 5 to 25 ft. per min. This last run took us about 2 hrs. and 45 minutes to get through. Film used was 1100 again Each strip was 50 ft. long in between each strip they had 100 ft. of leader. We had no tracking problems. No capstan marks. No watermarks. This film was also read Tuesday morning. They thought that it came out fairly well. We wereable to rold temperatures to 600 in dev. & fix, tanks, 120 m wash tanks. No acid was used in the short stop tank. The tank had been filled with plain water. We got out of there at about 12:30 (night).

I do have a complaint about the plumping. It seems that 50% of the p.v.c.joints on the service units are breaking loose. This is very embarraseing. As I mentioned we were in Tuesday morning to view the film.

Tuesday, October 8, 1963.

Finished fixing leaks except for second water tank since the manifold system loss to come off. This will be done first thing tomorrow. Checked out machine phases.

Main air bearing blower had been tampered with.

The air bearing pilot light wire which also controls the accumulator blowers was directly connected to line one. Because of this a lot of the units came on when main power switch was activated.

This took Bob about three hours to fix since we did not know what the trouble was there. Everything was all right at the plant when machine was last ran. It took us a few hours to run down the trouble. STATINTL

We had some visitors that night to see the machine run, namely Company. They were here for approximately three hours but did not see it run. Then they had to leave at about 11 o'clock. At approximately 11:30 we started up the machine. We ran it for about 15 minutes. It seemed to track O.K. After that we cleaned her up and went home.

The reason why it took so long to find the electrical trouble was because the main air bearing blower being used to run certain tests at which we did not knowabout. During these tests they did some rewiring which did not show up on the circuit diagram.

Wednesday October 9. 1963.

The major part of this shift was spent fixing leaks in the service unit. Safe lights were installed above the machine. The bottom manifold of the second who tank was removed because of a leak. The leaks we have in the prewet tank wore fixed. The same in the first wash tank.

We retightened all hose clamps on the machine to prevent any leaks. All tanks were flished with water in preparation for filling machine with chemicals. Developer used in Fk 4 b.s. Typo used F-5.

Mater was used in the shortstop tank. The metering drive capstan was checked with a basiar tachometer. The machine speed did not correspond with the tachometer reading. Before we know definitely if we have despeed control we will have to double check this with a different tachometer. We ran leader through the machine at speeds ranging 1 om 4 to 20 feet a minute. Form leader and leader that was purposely spliced incorrectly was run through themachine. There was no trouble encountered from this tear and had splice. We realigned the takeup spool on the takeup station during the run.

Wash No. 2 hearing pump went out. The reset button of the breaker was activated to start it up again.

The main service drain. Reason too much of a mess the way it is now. They comprained about the valve settings. They do not feel that the valve indications are plain enough for them to understand. By feeling is that this is not correct and that with the proper training anybody will be able to operate it.

Thursday, October 10, 1903.

to contain where we left off wednesday night. First of all I spoke to forever! George who saw observed last night's run for a couple of nours. I so we have the open about the machine. He told me that he was very impressed with most he was seen the previous evening. He asked a number of questions about 18, 1911 I amounted. Overall he liked our approaches and the concept of both same as

istrate because to state

The reduction I objected to was that they used film which had scratches on it.

I we reduct that this did not matter. We splitted the film to the leader using the which the like used was so 130 (thinbuse). The length of it was not five the through the developer tank, through the shortstop tank and the riser tank. At that there she splite broke loose. We did not note it right away and because of this the end of the leader was in the cause task tank and the front of the firm in the fixer tank.

the term williesd the two ends together expanding wash tank do. 1. It transferred becausifully without touching any of the searings. This had never been tried at the commany when the hadring was there.

Then (the sir horse) were quite happy with this. Then they can now safe alime he can now safe alime he also broke the splice on the end of the film. Not once but twice. Heason! Staples pulled out. This caused quite a mess there. The film has a tendency to crease and fold.

The splicer operates within one second after the end or film signal is received.

We'll never need it this fast but it is nice to have. The rest of the evening was a ent lixing leaks and teaching them how to thread the machine.

Ton wealendshing system worked good up until 10 GPH, which does not seem endugation sociations fresh.

The supporce will very likely ask for a change in pumps since they want up to 15 % or denishment.

Friday, October 11, 1963.

This time we took 50 feet of 80 130 and 50 feet of a0 370. The spliced these together to the leader by using tape. In the middle of the film run, the shortstop bearing pump went out. Checking the wiring diagram it shows a smarker for the protection of this pump. We did not stop the machine since there are alled in it. To bear off all the covers on the sutter trying to find the blocked but all not see all thing which resembled this

We had became until all the film had lore the fixer tank before we could switch on the highes. To still could not find the breaker.

We then started to trace the wiring on the machine and found that it went through 2 fuses directly to the switch. Altogether this took us about 4 hours. The 50 275 went through the drybox very nicely but the 50 130 hung up. he stopped the drive system for a short period of time and found the spring on the bottom dancing roller disconnected. After we hooked this up correctly it transported through the drybox very nicely. The viewing bearing was used periodically. It fogs film very badly. The location of it will be changed Monday evening since they want to use it during film runs. The take up station works good. We cannot use the cover which was hade over the last directing. There the land and the duct from the blower prevent us from mounting it. Because of this we have a fine spray hitting the film after it lasted the airanife. This spray causes watermarking, but is taken care of by a shield. Monday evening we will modify the entra cover we have so that this will be taken care of.

Chemicals were mixed for the sold tanks. These chemicals are used for replentsment. The short stop tank was filled with water only. There they do not want to use chemicals in it since according to them this is not necessary. They have been talking about putting another developer tank next to the existing one. This way they can speed up the processor. At the present time they feel that it should not be driven over 12 FFM. They like to up the speed to about 25 FFM.

They put a Warrent Officer by the name of Mr. Wagner in charge of the night crew.

A roll of film was flashed for Monday evening's run. It will be run at different speeds (from 5 FPM to 25 FPM). The reason for this is to determine the speed the sacrane must be set for to run the regular film tests. I believe that up until now we have given them a good showway we do need an operational manual very badly. They've been after us for the last couple of days about this.

This more or less coversthe last few days.

One thing I forgot to mention. The scratch test was read this weekend and we have scratches on the base side only. This is oud since the shortstop bearing was not operating. I have not been able to locate the trouble yet but hope to Monday ovening before we start the film tests.

Tuesday, October 15, 1963.

STATOTHR nother item & myself spoke about was the speed control system. I cannot get the knob adjusted correctly. Giving a sample: When we put a tachometer on the capstan and it reads 5 FPM, we set the knob at that location. Now when we crank it up to 10 FPM on the knob the capstan will rotate at 25 FPM. So as you can see there is no consistency.

At the present time I'm beaming all this on the tachometer since we accurately set this system at recently.

The present time I'm beaming all this on the tachometer since we accurately with a tachometer which had been calibrated STATOTHR

STATOTH will pick up a tachometer from the Assembly Department so that we may be sure what causes it. Until we check it out with this we have no way of knowing how accurate the system is. The plumbing on both transfer pumps is leaking. The plumbing on the Dev. Brg. pumps is leaking. Tonight we had two gentlemen take these pipes off and replumb them again after coating all fittings with proseal. Since this had to be done the tanks had to be drained. We had the only fix left in the building inside the tank. We will get new chemicals in the tanks tomorrow.

I went through a briefing on the machine with the observers. This lasted for about 2 hours. At about 10 o'clock we all left since there was nothing left to do until we received the parts Bob went to STATOTHR

The airconditioning unit should be repaired by Wednesday evening so we should be able to run film again.

I mentioned in my previous report about the last cover over the airbearing. It does not seem to be needed anymore there. We put the shield in between the airknife and last airbearing. This has taken care of the watermarking for now.

This more or less covers the last couple of days. The people are still very enthusiastic about the machine. Even the machine in the machine is to be impressed.

Wednesday, October 17, 1963.

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We waited for to showup with the parts he had picked up at neavy. He showed up aroung 8 o'clock since the freeway traffic was quite

Nothing much could be done until he showed up, there the machine was more or less in running shape except for these parts.

When Bob showed up the first thing we did was install the Winsco unit. Bob had to do this himself since we did not want it goofed up by the Airforce personnel. Since Bob had been going since 4 o'clock this morning he was kind of beat and after he finished installing the Winsco at about 9:45 P.M. we let him go to get some rest.

The rest of the evening was spent fixing the leaks in the service units. At about 11:45 this was all finished. Since there were only 15 min. left in the day they (the Air Force) decided that we might as well all go.

On the overall this night was not a complete waste even though in my opinion it should have been more productive.

Tomorrow night we hopeto get the machine completely ready for the 72 hour endurance test which is scheduled for this weekend.

This is all that hapened tonight except that some general cleanup had been done on the machine.

Thursday, October 18, 1963.

We checked out the tracking again by running leader & film through it. Approximately 2000 feet of leader was pushed through. Approximately 500 feet of film was pushed through. We readjusted the capstans in the drybox. We ran a total of 4 hours this way. We do not have any leaks anymore in the plumbing. We exchanged the plugs in the filter which were used for bleeding with drain locks since every time bleeding was needed the fluids would squirt all over the place. This was a little dangerous there we have a lot of electrical wiring in that area. The same was done to the helicoils.

The Airforce is the one who did this. They felt it was too unsafe and did not want to take any risks. We then drained developer of FLX systems completely and filled them up again with chemicals out of the mix and hold tanks. Then we put approximately 100 ft. of SO 8402 & SO 278 onto the filmcart. We went dark and processed this for scratches. We ran it at approximately 5 FPM. The SO 278 was good. The SO 8402 had only one objectionable item. These were vacuum capstan marks. Not bad but they were there.

suggested that the next time we run this type film we kill the vacuum in the metering capatan. Since this film should not slip since it has emulsion on both sides. This sounds reasonable to me and will be tried. Sgt. Wood is picking up H.F.'s tachometer tomorrow morning so that we can finish setting the speed control.

Friday, October 19, 1963.

Today we're supposed to start the 72 hr. endurance test. Yesterday I spoke to Mr. Wagner and had him agree that during this test they would run the acceptance test also. This means that they will run all 4 film width at 20 FP# 6 85 degrees and the outcome must be at a min. gamma of 1.

They will check the transport speed on film.

H.F. tomorrow morning. This we did.

Last night we ran leader approx. 200 ft. through the machine at 60 FPM and it dried in the drybox very nicely. According to the specifications 20,000 ft. of film must be processed through themachine continuously without breakdown. This will also be done during the endurance test. Since they will run most of the test at 5 FPM 66 hrs. of these 72 will be credited as the H.F. acceptance test.

I can keep on telling them that our spec. calls for 20 ft. min. but since they want to get comparison tests with existing machines they are insisting upon this and I guess we will have to go along with this. They divided their crew up into 2 12 hr.shifts. Bob went on the 12 midnight to 12 noon shift. I took the other. We made arrangements to be available during the time our shift was not on duty. At exactly 12 o'clock noon we switched on themachine.

We had 4000 ft. of leader & 4000 ft. of film on the filmcart. A roll of 500 ft. of leader had been installed below the splicer. We started off by running leader until our Dev.& Fix. temp. would get down to 680 F. This took about 30 min.

We then, made an automatic and 2 manual splices with the stapler to make sure that she would function correctly. We checked out the capstan speed with the tachometer. The tachometer which is owned by the Airforce is no good. It needs calibrating. We adjusted the speed control knob to correspond with the capstan speed. This was all done while the machine was running. By this time one hr. had passed. The metering capstan started acting up. It would speed up by herself. It was the same trouble we had at D.F. The silicon rectifier in the Minarik control box stays open there it gets too warm in there. The funny part of it is that the temp. coming out of the box was about 850, coming (being blown into by a fan) into the cabinet 700 to 740. This should cool it down beautifully but it did not. Since we did not want to stop the 72 hr. run we only stopped the drive system by switching off the drive master since that was the only way we could switch the capstan off. We continued blowing cool air on it. After it cooled down we'd start it up again but after about 15 min. she'd do the same thing again.

I spoke with the same thing we already tried. He told me that he would get in touch with Minarik the same thing we already tried. He told me that he would get in touch with Minarik right away and try to take care of this faulty unit. I called again at 7:45 after continuously trying to keep the unit running by keeping it cool. At this time I at the same time. I presumed that E.D. had STATOTH spoke to at the same time. I presumed that E.D. had stold Ivan about the troubles since he mentioned to me that he would do this in our previous conversation. This had not been done according to Ivan and Minarik had not been gotten a hold of. This was bad there by this time it was the Touth Ro do very much appeared Fow Release 2000/05/40 the Care Presentation.

Friday October 19th continued.

wrong but I guess we'll never know until we try.

I'm now waiting for the unit to come back. We will now have to wait until next weekend for the 72 hr. run. there the machine takeshall their chilled water and most of their power. * This will give us a change to try to get some of the H.F. acceptance tests pushed through. This run was very unsuccessful.

STATOTHR

* I'd like to release now but as, told me over the phone it's much better that we have him standing by during this 72 hr. run in case something else goes haywire. I can't think of anything else which could go